

WE CLAIM:

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1 In an objective lens for an electronic camera, an improvement comprising:
an optical element on an optical axis of the lens and having a surface at a location along
the optical axis having light rays substantially perpendicular to said surface, and
5 a coating on said optical element surface forming an interference filter for causing a
modification of the spectrum of light waves supplied to the camera in a manner for the camera to
simulate a predetermined spectrum of light rays.

2. The objective lens of claim 1, wherein said optical element surface is optically
flat.

10 3. The objective lens of claim 1, wherein said optical element is removable and
replaceable from the objective lens.

4. The objective lens of claim 3, further including a replacement optical element
having substantially the same optical characteristics and without said coating.

15 5. The objective lens of claim 1, wherein said location along the optical axis is
adjacent an iris of the objective lens.

6. The objective lens of claim 1, wherein the objective lens includes focusing means
and said location along the optical axis allows focusing of the objective lens without
substantially changing an angle of incidence of the light rays on said surface.

20 7. The objective lens of claim 1, wherein the objective lens includes zooming means
and said location along the optical axis allows zooming of the objective lens without
substantially changing an angle of incidence of the light rays on said surface.

8. The objective lens of claim 7, wherein the objective lens includes focusing means and said location along the optical axis allows focusing of the objective lens without substantially changing an angle of incidence of the light rays on said surface.

5 9. The objective lens of claim 1, wherein said coating includes layers of low refractive index material and layers of high refractive index materials for producing said predetermined spectrum of light rays.

10. In an objective lens for an electronic camera, an improvement comprising; an optically flat optical element on and perpendicular to an optical axis of the lens at a location along the optical axis having substantially collimated light rays, and

10 a coating on said optical element forming an interference filter for causing a modification of the spectrum of light waves supplied to the camera in a manner for the camera to simulate a predetermined spectrum of light rays.

11. The objective lens of claim 10, wherein said optical element is removable and replaceable from the objective lens.

15 12. The objective lens of claim 11, further including a replacement optical element having substantially the same optical characteristics and without said coating.

13. The objective lens of claim 10, wherein said location along the optical axis is adjacent an iris of the objective lens.

20 14. The objective lens of claim 10, wherein the objective lens includes focusing means and said location along the optical axis allows focusing of the objective lens without substantially changing an angle of incidence of the light rays on said surface.

15. The objective lens of claim 10, wherein the objective lens includes zooming means and said location along the optical axis allows zooming of the objective lens without substantially changing an angle of incidence of the light rays on said surface.

16. The objective lens of claim 15, wherein the objective lens includes focusing means and said location along the optical axis allows focusing of the objective lens without substantially changing an angle of incidence of the light rays on said surface.

17. The objective lens of claim 10, wherein said coating includes layers of low refractive index material and layers of high refractive index materials for producing said predetermined spectrum of light rays.

18. A method for causing an electronic camera to sense and reproduce a predetermined spectrum of light rays, comprising the steps of:

providing the camera with an objective lens having an optical element surface within the objective lens at a location where the light rays are substantially perpendicular to the optical element surface, and

providing the optical element surface with a coating forming an interference filter for modifying the spectrum of light rays to the predetermined spectrum for supplying to the camera.

19. The method according to claim 18, including the step of removing and replacing an optical element having said surface with another optical element having a surface with a different coating forming an interference filter for modifying the spectrum of light rays to a different predetermined spectrum.

20. The method according to claim 18, including the step of selecting said coating for said optical element surface for modifying the spectrum of light rays to simulate the predetermined spectrum of a film emulsion of film for a film camera.

21. The method according to claim 18, including the step of selecting the location of the optical element surface within the objective lens on the basis of the location having minimum ray incident angles at the surface.

5 22. The method according to claim 21, wherein the maximum ray incident angle on the surface is 15°.

23. A method for causing an electronic camera to sense and reproduce a predetermined spectrum of light rays, comprising the steps of:

providing the camera with an objective lens having an optical element within the objective lens at a location of substantially collimated light rays, and

10 providing the optical element with a coating forming an interference filter for modifying the spectrum of light rays to the predetermined spectrum for supplying to the camera.

24. The method according to claim 21, wherein the optical element is optically flat.

25. An objective lens for causing an electronic camera to sense and reproduce a predetermined spectrum of light rays, comprising:

15 an optical element within the objective lens at a location of substantially collimated light rays, and

a coating on said optical element forming an interference filter for modifying the spectrum of light rays to the predetermined spectrum for supplying to the video camera.